



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/497,499 02/04/00 ASAKAWA K OKI.147

MMC1/0822
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EXAMINER

LOUIE, W

ART UNIT

PAPER NUMBER

2814

DATE MAILED:

08/22/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/497,499

Applicant(s)

ASAKAWA ET AL.

Examiner

Wai-Sing Louie

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 1-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morozumi et al. (US 6,246,105) in view of La Fleur et al. (US 5,903,041).

With regard to claim 10, Morozumi et al. disclose a semiconductor device (col. 5, line 62 to col. 22, line 10 and fig. 5) comprising:

- A semiconductor substrate 11 which has a first and a second region formed on a major surface (fig. 5);
- A first insulating layer 12 which is formed over the first region;
- A dummy pattern 37 which has a predetermined shape and which is formed on the first insulating layer;
- A first SiO₂ layer 20, which is formed on the side surface of the dummy pattern and the first insulating layer. Morozumi et al. do not disclose the method of forming this oxide layer, but Morozumi disclose spin-on-glass (SOG) is an acceptable method of forming this layer (col. 1, lines 22-29);
- A second SiO₂ layer 22, which is formed on a top surface of the dummy pattern and the first SOG layer, the second SiO₂ layer being denser than the first SOG

layer (col. 4, lines 24-29). This layer could be formed by SOG method with the same reasoning as above;

- A second insulating layer 24, which is formed on the second SOG layer, where the first and second insulating layer and the first and second SOG layer are exposed at a boundary between the first and the second region (fig. 5).

With regard to claim 11, Morozumi et al. disclose the semiconductor device is part of a LSI (col. 1, line 15), but do not disclose the entire integrated circuit. If the device is formed on a VLSI and the pattern is repeated to form an array, the second region could become part of the array. Therefore, it would have been obvious to one with ordinary skill in the art to recognize the second region is a grid line when the semiconductor components form a large integrated circuit (LSI).

With regard to claims 12 and 14, Morozumi et al. do not disclose a fuse element, which is formed over the second region. However, La Fleur et al. disclose a fuse element. La Fleur et al. teach fuses have been widely used in integrated circuits as electrically programmable element (La Fleur col. 2, lines 31-34) and are used in numerous schemes for providing integrated circuit interconnections, which is known in the art (La Fleur col. 1, lines 25-30). Hence, it would have been obvious to one with ordinary skill in the art to provide a fuse element in order to program the integrated circuits.

With regard to claim 13, in addition to the structures disclosed in claim 10, Morozumi et al. also disclose:

- The first insulating layer 12 is also formed over the second region (the field oxide extends over to the gate structure as a gate oxide 13);

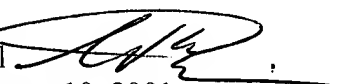
Art Unit: 2814


- The dummy pattern could be a frame shaped surrounding the first region (if the device is repeated on the integrated circuit).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wai-Sing Louie whose telephone number is (703) 305-0474. The examiner can normally be reached on 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (703) 306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

wsf 
August 10, 2001


OLIK CHAUDHURI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800